

Work Order ID 145572

Friday, May 06, 2016 9:11:38 AM

145572

Page 1

Item ID: D4406-3

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Plate

Start Date: 5/2/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 5/5/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: MUS Date: MAY 09 2016

Tooling:

Date:

Run Start

NR1

QC: _____ Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4406	D								

100

0.07

100

Waterjet

FLOW CNC Waterjet

Memo

1-Cut as per dwg D4406-3

prog rev: D

dwg rev: D

2-Deburr if required

1.24

(4)

DC 16/06/28

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Quality Control

Memo

0.04

(4)

DC 16/06/28

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY							
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process	OTHER : _____							
Misidentified ☐	☐	Past Due								

Friday, May 06, 2016 9:11:38 AM

Page 2

Accept

N900040100

Setup Start *NS1*

Stop *NS2*

Item Name: Plate

Start Date: 5/2/2016 **Start Qty:** 4.00 ***4***

Cust Item ID:

Required Date: 5/5/2016 **Req'd Qty:** 4.00 ***4***

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.08

Quality Control

JUL 04 2016

130

0.03

130

Small Fab

Memo

0.28

Small Fab

Form as per dwg D4406

DAS
30
9-89

JUL 11 2016

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.08

Quality Control

DAS
38
9-89
JUL 11 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 145572

Friday, May 06, 2016 9:11:38 AM

145572

Page 3

Item ID: D4406-3 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Plate
 Start Date: 5/2/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 5/5/2016 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Identify as per dwg & Stock Location: <u>WA002</u>	0.00				(4)			0.03 38 9-89
150									
Packaging	Memo	0.04							
Packaging	LOCATION: WA002								
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.40							
Quality Control									

JUL 11 2016

[Handwritten signature] / *[Handwritten signature]* 16/07/12
 Jem 16/07/11

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								

Picklist Print

Friday, May 06, 2016 9:11:37 AM

Work Order ID: 145572

145572

Parent Item: D4406-3

D4406-3

Parent Item Name: Plate

Start Date: 5/2/2016

Required Date: 5/5/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 14.04.09 DWG REV.C DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S18GA		Purchased	No				sf	255.2905		12.29474			
M304S18GA									**			05/16/2016	
304/316 .050 Sheet													

Location	Loc Qty	Loc Code
MAT020	116.521	
M133328	104.796	
M133587	11.725	
MAT20	128	
M134580	128	
TPI	10.76946	
M134604	10.76946	
134824		

10

DQA: _____ Date: _____



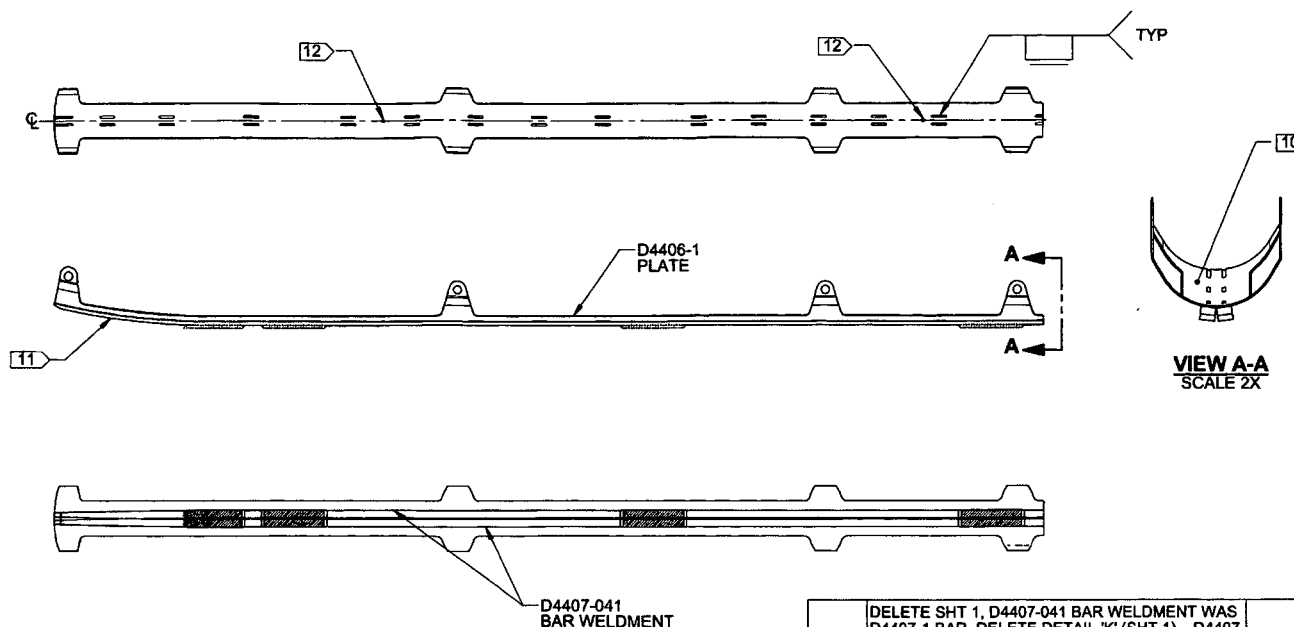
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY					
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : ☐									

ITEM	QTY	P/N	DESCRIPTION
	X	D4406-041	FWD WEARPLATE ASSY
1	1	D4406-1	PLATE
2	2	D4407-041	BAR WELDMENT



D4406-041 FWD WEARPLATE ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 8.48 lbs
- 8) WELDING: PER QSI 004
- 9) N/A
- 10) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING, 0.020-0.040 THICK, PER DART QSI 005 4.9
- 11) FORM TO MATCH PROFILE OF D4406-1 AT TIME OF WELDING.
- 12) TRANSFER $\phi 0.188$ HOLES FROM D4406-1 TO D4407-041

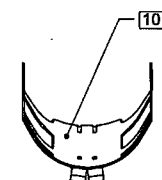
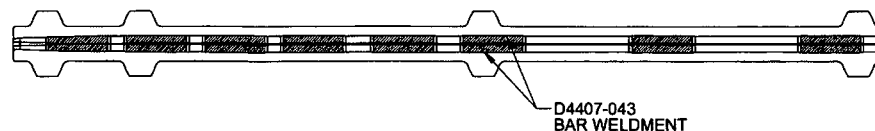
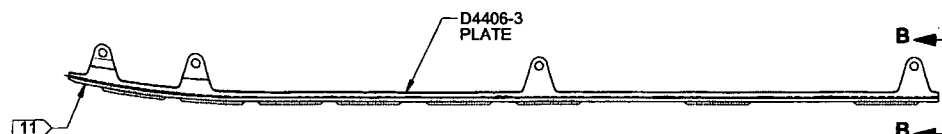
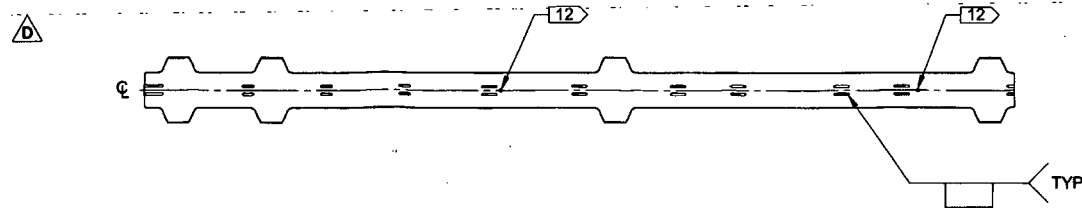
D	DELETE SHT 1, D4407-041 BAR WELDMENT WAS D4407-1 BAR, DELETE DETAIL 'K' (SHT 1), D4407-043 BAR WELDMENT WAS D4407-3 BAR, DELETE DETAIL 'L' (SHT 2), REMOVE NOTE 9 (SHT 1&2), NOTE 10: TEXTURED COATING WAS ROCKGUARD (SH 1&2), NOTE 12: D4407-041 WAS D4407-1 (SHT 1), D4407-043 WAS D4407-3 (SHT 2), REMOVE NOTE 13 (SHT 1&2)	DB	15.10.14
C	SHEETS 4 AND 5 HOLE SLOTS RE-PITCHED, SHT 5 FWD SLOT SIZES WERE 0.88 (REF NCR12-2031)	AJS	13.03.11
B	REVISE BILL OF MATERIAL; ADD NOTE 13/14 & REVISE NOTE 9 SHT 2&3; MODIFY DETAIL E & F (ZN B3-6, C2-6); ADD DETAIL G (ZN C7-6); REVISE D4406-3F TAB LOCATIONS (ZN B5-5)	RF	12.02.16
A	NEW ISSUE	RF	11.08.15
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	ML	DRAWING NO. D4406	
MFG. APPR.	DD	REV. D	
APPROVED	WM	TITLE WEARPLATE ASSY	
DE APPR.	DS	SCALE NTS	
DATE	15.10.14	COPYRIGHT © 2011 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCIALIZED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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2016-02-08
EEN 16-518

APPROVED

PHOTO COPY
FOR OFFICIAL COPY
145578 ML5
1605.09

ITEM	QTY -043	P/N	DESCRIPTION
	X	D4406-043	WEARPLATE ASSY
1	1	D4406-3	PLATE
2	2	D4407-043	BAR WELDMENT



VIEW B-B
SCALE 2X

D4406-043 AFT WEARPLATE ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 8.70 lbs
- 8) WELDING: PER QSI 004
- 9) N/A

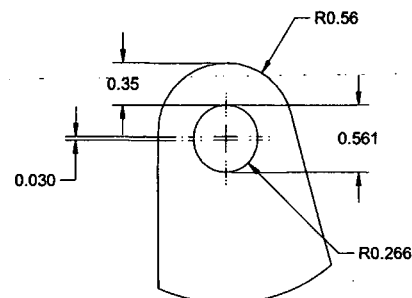
- 10) COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING, 0.020-0.040 THICK, PER DART QSI 005 4.9
- 11) FORM TO MATCH PROFILE OF D4406-3 AT TIME OF WELDING.
- 12) TRANSFER $\varnothing 0.188$ HOLES FROM D4406-3 TO D4407-043

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2016-02-08

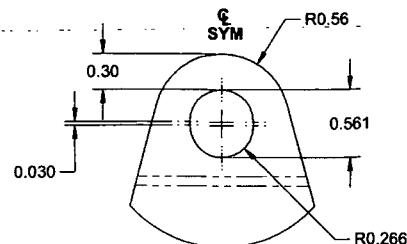
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DESIGN	RF	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ML	DRAWING NO.	REV. D
MFG. APPR.	DD	D4406	SHEET 2 OF 5
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WEARPLATE ASSY	NTS
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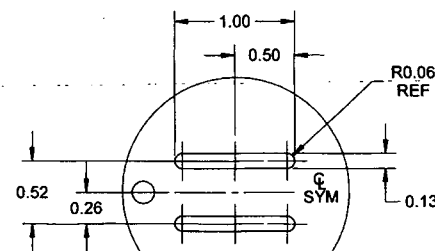
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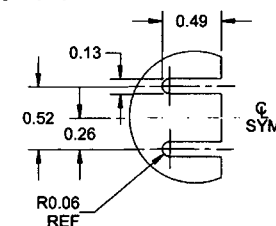
DETAIL G
SCALE 6X



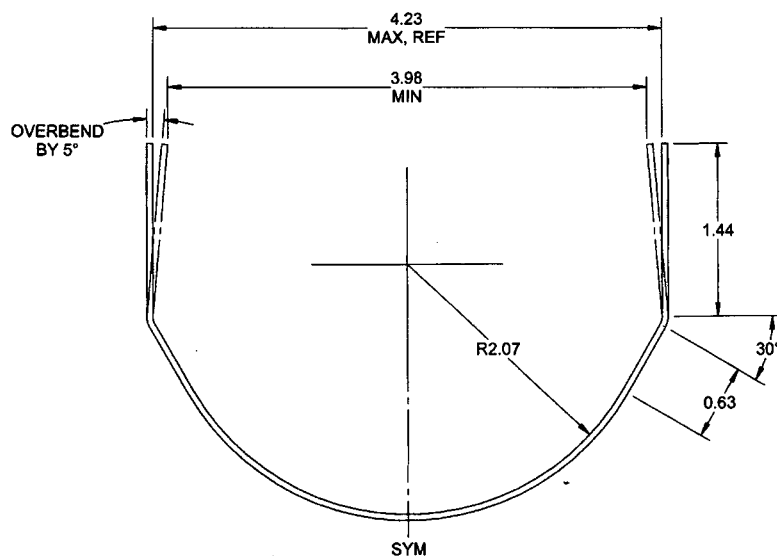
DETAIL D
SCALE 6X



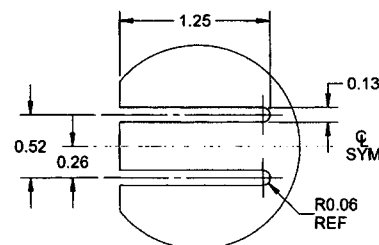
DETAIL E
SCALE 6X



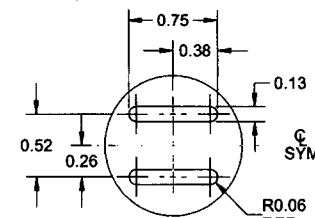
DETAIL F
SCALE 6X



DETAIL C
DETAIL TYP
SCALE 6X



DETAIL H
SCALE 6X



DETAIL J
SCALE 6X

APPROVED

DESIGN	RF
DRAWN	DB
CHECKED	ML
MFG. APPR.	DD
APPROVED	WM
DE APPR.	DS
DATE	15.10.14

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DRAWING NO. D4406	REV. D
TITLE WEARPLATE ASSY	SCALE NTS
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2016-02-08

8 7 6 5 4 3 2 1